

---

---

**Acoustics — Laboratory measurement of  
the flanking transmission of airborne and  
impact sound between adjoining  
rooms —**

**Part 2:  
Application to light elements when the  
junction has a small influence**

*Acoustique — Mesurage en laboratoire des transmissions latérales du  
bruit aérien et des bruits de choc entre des pièces adjacentes —*

*Partie 2: Application aux éléments légers lorsque la jonction a une faible  
influence*



**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

This document is a preview generated by EVS

© ISO 2006

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

Page

Foreword.....	iv
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions.....	2
4 Measuring equipment.....	3
5 Test arrangement.....	3
5.1 Requirements for the laboratory.....	3
5.2 Installation of the test element.....	4
5.3 Verification procedure for a light flanking element that is structurally independent of a separating element.....	7
5.4 Shielding technique used in the case of airborne excitation.....	8
6 Test procedures .....	8
7 Precision.....	8
8 Expression of results .....	8
9 Test report .....	9
Annex A (informative) Measurement of $D_{n,f,l}$ with intensity technique.....	10
Bibliography .....	11

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 10848-2 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 126, *Acoustic properties of building elements and of buildings*, in collaboration with Technical Committee ISO/TC 43, *Acoustics*, Subcommittee ISO 2, *Building acoustics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This first edition cancels and replaces EN 20140-9 and ISO 140-12.

ISO 10848 consists of the following parts, under the general title *Acoustics — Laboratory measurement of the flanking transmission of airborne and impact sound between adjoining rooms*:

- *Part 1: Frame document*
- *Part 2: Application to light elements when the junction has a small influence*
- *Part 3: Application to light elements when the junction has a substantial influence*

The following part is under preparation:

- *Part 4: Application to all other cases*

# Acoustics — Laboratory measurement of the flanking transmission of airborne and impact sound between adjoining rooms —

## Part 2: Application to light elements when the junction has a small influence

### 1 Scope

ISO 10848 specifies measurement methods to be performed in a laboratory test facility in order to characterize the flanking transmission of one or several building components.

The measured quantities may be used to compare different products, or to express a requirement, or as input data for prediction methods, such as EN 12354-1 and EN 12354-2.

This part of ISO 10848 is specifically referred to in ISO 10848-1:2006, 4.4, as being a supporting part of the frame document.

This part of ISO 10848 applies to light elements such as suspended ceilings, access floors, light uninterrupted façades or floating floors. The transmission from one room to another can be simultaneous through the test element and via the plenum, if any. With measurements according to this part of ISO 10848, the total sound transmission is measured, and it is not possible to separate the two kinds of transmission. The measured quantities  $D_{n,f}$  and  $L_{n,f}$  depend on the actual dimensions of the test specimen.

A light element is defined in ISO 10848-1:2006, Clause 3.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 140-2, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 2: Determination, verification and application of precision data*

ISO 140-3:1995, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 3: Laboratory measurements of airborne sound insulation of building elements*

ISO 140-6:1998, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 6: Laboratory measurements of impact sound insulation of floors*

ISO 354, *Acoustics — Measurement of sound absorption in a reverberation room*

ISO 717-1, *Acoustics — Rating of sound insulation in buildings and of building elements — Part 1: Airborne sound insulation*

ISO 717-2, *Acoustics — Rating of sound insulation in buildings and of building elements — Part 2: Impact sound insulation*

ISO 10848-1:2006, *Acoustics — Laboratory measurement of the flanking transmission of airborne and impact sound between adjoining rooms — Part 1: Frame document*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

#### 3.1 normalized flanking level difference

$D_{n,f}$   
difference in the space and time average sound pressure level produced in two rooms by one or more sound sources in one of them, when the transmission only occurs through a specified flanking path

NOTE  $D_{n,f}$  is normalized to an equivalent sound absorption area ( $A_0$ ) in the receiving room and is expressed in decibels:

$$D_{n,f} = L_1 - L_2 - 10 \lg \frac{A}{A_0} \text{ dB} \quad (1)$$

where

$L_1$  is the average sound pressure level in the source room, in decibels;

$L_2$  is the average sound pressure level in the receiving room, in decibels;

$A$  is the equivalent sound absorption area in the receiving room, in square metres;

$A_0$  is the reference equivalent sound absorption area, in square metres;  $A_0 = 10 \text{ m}^2$ .

[ISO 10848-1:2006]

#### 3.2 normalized flanking impact sound pressure level

$L_{n,f}$   
space and time average sound pressure level in the receiving room produced by a standard tapping machine operating at different positions on a tested floor in the source room, when the transmission only occurs through a specified flanking path

NOTE  $L_{n,f}$  is normalized to an equivalent sound absorption area ( $A_0$ ) in the receiving room and is expressed, in decibels:

$$L_{n,f} = L_2 + 10 \lg \frac{A}{A_0} \text{ dB} \quad (2)$$

where

$L_2$  is the average sound pressure level in the receiving room, in decibels;

$A$  is the equivalent sound absorption area in the receiving room, in square metres;

$A_0$  is the reference equivalent sound absorption area, in square metres;  $A_0 = 10 \text{ m}^2$ .

[ISO 10848-1:2006]

#### 3.3 plenum space

whole of the void below an access floor or above a suspended ceiling in both rooms in the test facility